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NOTICE OF ALLOWANCE AND FEE(S) DUE

44987

7590

08/07/2008

HARRITY SNYDER, LLP
11350 Random Hills Road
SUITE 600
FAIRFAX, VA 22030

EXAMINER

HOANG, HIEU T

ART UNIT

PAPER NUMBER

2152

DATE MAILED: 08/07/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,962	01/30/2004	Wladimir de Lara Araujo Filho	0023-0188	2502
TITLE OF INVENTION: NETWORK SINGLE ENTRY POINT FOR SUBSCRIBER MANAGEMENT				

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$0	\$0	\$1440	11/07/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
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 or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

44987 7590 08/07/2008
HARRITY SNYDER, LLP
11350 Random Hills Road
SUITE 600
FAIRFAX, VA 22030

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	NO	\$1440	\$0	\$0	\$1440	11/07/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
HOANG, HIEU T	2152	709-223000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE: (CITY AND STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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44987	7590	08/07/2008	EXAMINER	
HARRITY SNYDER, LLP 11350 Random Hills Road SUITE 600 FAIRFAX, VA 22030			HOANG, HIEUT	
			ART UNIT	PAPER NUMBER
			2152	
DATE MAILED: 08/07/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 878 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 878 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/766,962

Examiner

HIEU T. HOANG

Applicant(s)

FILHO ET AL.

Art Unit

2152

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed on 6/9/2008.
2. ☒ The allowed claim(s) is/are 1-4, 6, 8-16, 19-20, 22-23, 25, 27-28, 30-32.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION
EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Viktor Simkovic, followed by applicant's proposed examiner amendment on the 07/16/2008.

The claims have been amended as follows:

1. (Currently amended) One or more devices in a network comprising:
at least one storage device for storing computer instructions for implementing:

agents configured to collect information relating to other devices in the network; and

at least one resolver configured to contact the agents to obtain the collected information and configured to identify, based on identification information of a subscriber, a network resource that manages elements associated with the subscriber to implement network services for the subscriber, the at least one resolver ~~performing the identification of~~ identifying the network resource in accordance with a resolution process determined based on the information collected by the agents, the resolution process specifying a mapping from the identification information of the subscriber to the

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network resource, wherein, when identifying the network resource in accordance with the resolution process, the at least one resolver is part of a resolution graph defined by vertices representing network data types used by the at least one resolver and edges representing resolvers that can perform a mapping from a data type represented by a source vertex to another data type represented by a destination vertex, wherein the network data types comprise an Internet Protocol (IP) address, an IP pool, and a service activation engine identifier (ID).

2. (Currently amended) The one or more devices of claim 1, further comprising:

a plurality of host components ~~[[that]]~~ wherein each ~~provide~~ provides a framework for execution of the agents and the at least one resolver.

3. (Previously presented) The one or more devices of claim 2, wherein the plurality of host components are distributed in the network.

4. (Currently amended) The device of claim 1, wherein the other devices in the network include at least one of service activation engines, routers, Radius servers, ~~[[and]]~~ or Lightweight Directory Access Protocol servers.

5. (Cancelled)

6. (Currently amended) The device of claim [[5]] 1, wherein the resolution graph is further defined by constraints that specify prerequisites for traversing the edges.

7. (Cancelled)

8. (Currently amended) The device of claim 1, wherein the agents are dynamically added in response to the other devices being added to the network.

9. (Currently amended) The device of claim 1, wherein the agents include at least one remote agent that executes on [[a]] one of the other devices with which the agents collect information.

10. (Currently amended) The device of claim 1, wherein the network resource that ~~manage~~ manages the elements comprises service activation engines.

11. (Currently amended) The device of claim 1, wherein the network resource that ~~manage~~ manages the elements [[are]] is implemented within routers.

12. (Previously presented) The device of claim 1, wherein the agents push the collected information to the at least one resolver.

13. (Currently amended) A method implemented in a network comprising:
collecting information pertaining to a plurality of different network devices via a set of collection agents;
identifying, using resolvers and a resolution graph defined by vertices representing network data types and edges representing the resolvers that can perform a mapping from a data type represented by a source vertex to another data type represented by a destination vertex, one of the plurality of different network devices as a network device that provides services to a subscriber of the network based on information that identifies the subscriber and based on the collected information, wherein the information that identifies the subscriber comprises an Internet Protocol (IP) address and wherein the identified network device comprises a service activation engine (SAE) that manages routing devices; and
specifying a mapping from the information that identifies the subscriber to the identified network device.
14. (Original) The method of claim 13, further comprising:
pushing the collected information to a network information collector (NIC).
15. (Original) The method of claim 13, further comprising:
transmitting the collected information to a network information collector (NIC)
when the collected information is requested by the NIC.

16. (Currently amended) The method of claim 13, wherein the collection agents are executed remotely at at least one of the plurality of different network devices.

17-18. (Cancelled)

19. (Currently amended) The method of claim 13, wherein the network device includes at least one of a Radius server ~~[[and]]~~ or a Lightweight Directory Access Protocol (LDAP) server.

20. (Currently amended) A system comprising:
a gateway, comprising hardware, configured to receive network service requests from or on behalf of subscribers in a network, at least some of the service requests requiring configuration of one or more routers to satisfy the service request;

a network information collector (NIC), coupled to the gateway, configured to identify a service activation engine associated with the one or more routers required to satisfy the at least some of the service ~~request~~ requests, the NIC including:

at least one resolver configured to create a resolution graph and identify the service activation engine by traversing the resolution graph, wherein the resolution graph is defined by vertices representing network data types used by the at least one resolver and edges representing resolvers that can perform a mapping from a data type represented by a source vertex to another data type represented by a destination

vertex, wherein the network data types comprise an Internet Protocol (IP) address, an IP pool, and a service activation engine identifier (ID); and

a plurality of agents, coupled to the NIC, configured to collect information relating to a state of ~~a plurality of~~ the one or more routers, the collected information being used to identify the service activation engine.

21. (Cancelled)

22. (Currently amended) The system of claim ~~[[21]]~~ 20, further comprising:
a plurality of distributed resolvers.

23. (Currently amended) The system of claim ~~[[21]]~~ 20, wherein the resolution graph is formed based on the information collected by the plurality of agents.

24. (Cancelled)

25. (Currently amended) The system of claim ~~[[24]]~~ 20, wherein the resolution graph is further defined by constraints that specify prerequisites for traversing the edges.

26. (Cancelled)

27. (Currently amended) A method of resolving a resolution request to identify a management resource, the method comprising:

receiving a resolution request that includes an identification of a subscriber;

performing a resolution process that specifies an ordering of functions required to satisfy the resolution request, including determining a mapping from the identification of the subscriber to the management resource, the resolution process comprising consulting a resolution graph, wherein the resolution graph includes:

vertices and edges, wherein the vertices represent network data types used by resolvers and the edges represent resolvers that perform a mapping from a data type represented by a source vertex to another data type represented by a destination vertex, wherein the network data types comprise an Internet Protocol (IP) address, an IP pool, and a service activation engine identifier (ID);

selecting resolvers designed to perform the functions specified in the resolution process; and

controlling the resolvers to perform the functions specified in the resolution process.

28. (Previously presented) The method of claim 27, wherein the resolvers are distributed across different network elements in a network.

29. (Cancelled)

30. (Currently amended) The method of claim [[29]] 27, wherein selecting resolvers further includes:

associating [[a]] cost ~~value~~ values with the edges of the resolution graph; and
selecting edges based on the associated ~~costs~~ cost values.

31. (Currently amended) The method of claim 30, wherein edges that are associated with remote resolvers are associated with higher cost values than edges associated with local resolvers.

32. (Currently amended) The method of claim [[29]] 27, wherein selecting resolvers further includes:

associating constraints with the edges of the resolution graph that specify prerequisites for traversing the edges; and
selecting edges based on the associated constraints.

33-34. (Cancelled)

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

Claims 1-4, 6, 8-16, 19-20, 22-23, 25, 27-28, 30-32 are allowed in response applicant's persuasive arguments in the reply filed on 04/14/2008, followed by the phone interview with Viktor Simkovic and applicant's proposed examiner amendment on the 07/16/2008.

The prior art of record does not teach the claimed invention, as follows.

The prior art does not teach a resolution process that specifies an ordering of functions required to satisfy the resolution request, including determining a mapping from the identification of the subscriber to the management resource, the resolution process comprising consulting a resolution graph, wherein the resolution graph includes: vertices and edges, wherein the vertices represent network data types used by resolvers and the edges represent resolvers that perform a mapping from a data type represented by a source vertex to another data type represented by a destination vertex, wherein the network data types comprise an Internet Protocol (IP) address and a service activation engine identifier (ID);

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior arts made of record and not relied upon is considered pertinent to applicant's disclosure are listed in form PTO 392.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-

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1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2146

